

What is claimed:

1. A method of coloring a rubber substrate, comprising the steps of:
providing a latex-based colorant comprising 5-50 percent by weight latex-based binder,
5 10-70 percent by weight a pigment system comprising an organic pigment dispersion and
opacifer, and 0-85 percent by weight water; and
mixing said latex-based colorant with said rubber substrate.
2. The method of claim 1 wherein said latex-based colorant comprises 10-20 percent by
weight latex-based binder, 30-55 percent by weight said pigment, and 25-60 percent by weight
10 water.
3. The method of claim 1 further comprising the step of vulcanizing the rubber during the
mixing of said colorant and said rubber substrate.
4. The method of claim 3 wherein said rubber is vulcanized with a vulcanization agent, a
cure activator, and an accelerator.
- 15 5. The method of claim 4 wherein said vulcanization agent is a water based dispersion of
sulfur, said cure activator is a water based dispersion of zinc oxide, and said accelerator is
selected from the group consisting of thiuram, dithiocarbonate, xanthate, mercapto thiazole,
mercapto sulfonamide, thiourea, and guanidine.
6. The method of claim 1 wherein said rubber is black.

7. The method of claim 1 wherein said latex binder comprises an elastomeric latex selected from the group consisting of natural rubber, synthetic rubber, or a mixture thereof, wherein said elastomeric latex forms lattices, or colloidal dispersions of polymeric material, in a water-based system and has a solids content between 25-75%.
- 5 8. The method of claim 7 wherein said synthetic rubber is selected from the group consisting of styrene butadiene rubber, nitrile rubber, butyl rubber, polychloroprene rubber, and ethylene-propylene rubber.
9. The method of claim 1 wherein said water based colorant further comprises a surfactant system, a defoamer, an antioxidant, and a thickener.
- 10 10. The method of claim 11 wherein said surfactant system is selected from the group consisting of non-ionic, anionic, and cationic surfactants, and mixtures thereof; said defoamer comprises a mixture of hydrophobic solids and polysiloxanes; said antioxidant is selected from the group consisting of is N-N' Di(2-octyl)-p-phenylene diamine, diphenyl-p-phenylendedi-amine, octylated diphenylamine, dioctylated diphenylamine, styrenated phenol, hindered phenol, and mixtures thereof; and said thickener is selected from the group consisting of a gum, starch, cellulose polymer, mineral, alginate, and mixtures thereof.
- 15 11. The method of claim 1 wherein said pigment system comprises titanium oxide and an organic pigment dispersion.
12. The method of claim 11 wherein said pigment system comprises titanium dioxide and a water dispersion of an organic pigment between a 3:1 and 2:1 ratio, respectively.
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13. The method of claim 1 wherein said rubber substrate is selected from the group consisting of crumb rubber, natural rubber, styrene butadiene rubber, nitrile rubber, butyl rubber, polychloroprene rubber, and ethylene-propylene rubber.

14. The method of claim 1 wherein said rubber substrate is crumb rubber.

5 15. A latex-based colorant for coloring a rubber substrate comprising a latex binder and a pigment system.

16. The latex-based colorant of claim 15 wherein said latex binder comprises an elastomeric latex selected from the group consisting of natural rubber, synthetic rubber, or a mixture thereof, wherein said elastomeric latex forms lattices, or colloidal dispersions of polymeric material, in a
10 water-based system and has a solids content between 25-75%.

17. The latex-based colorant of claim 16 wherein said synthetic rubber is selected from the group consisting of styrene butadiene rubber, nitrile rubber, butyl rubber, polychloroprene rubber, and ethylene-propylene rubber.

18. The latex-based colorant of claim 16 wherein said water-based colorant further comprises
15 a surfactant system, a defoamer, an antioxidant, and a thickener.

19. The latex-based colorant of claim 18 wherein said surfactant system surfactant system is selected from the group consisting of non-ionic, anionic, and cationic surfactants, and mixtures thereof; said defoamer is a mixture of hydrophobic solids and polysiloxanes; said antioxidant is selected from the group consisting of is N-N' Di(2-octyl)-p-phenylene diamine, diphenyl-p-phenylenediamine, octylated diphenylamine, dioctylated diphenylamine, styrenated phenol,
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hindered phenol, and mixtures thereof; and said thickener is selected from the group consisting of a gum, starch, cellulose polymer, mineral, alginate, and mixtures thereof.

20. The latex-based colorant of claim 16 wherein said pigment comprises titanium oxide and an organic pigment dispersion.

5 21 Colored rubber comprising a rubber substrate and a colored latex coating in contact with said rubber substrate.

22. The colored rubber of claim 21 wherein said colored latex coating comprises a pigment system and latex binder.

10 23. The colored rubber of claim 22 wherein said pigment system comprises an opacifer and an organic pigment dispersion.

24. The colored rubber of claim 21 wherein said rubber substrate is selected from the group consisting of natural rubber, crumb rubber, styrene butadiene rubber, nitrile rubber, butyl rubber, polychloroprene rubber, and ethylene-propylene rubber.

25. The colored rubber of claim 21 wherein said rubber substrate is crumb rubber.